

FACTS ABOUT

Truck and Bus Regulation Compliance Options

Fleets have flexibility with three compliance options

On December 12, 2008, the California Air Resources Board (ARB) approved a new regulation to significantly reduce particulate matter (PM) and oxides of nitrogen (NOx) emissions from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance requirements between 2011 and 2023. By January 1, 2023, all vehicles must have a 2010 model year engine or equivalent. For general information about the regulation, see Overview of the Truck and Bus Regulation. This fact sheet describes the three primary compliance options fleets can use.

What compliance options do fleets have?

Fleet owners can comply with the regulation by meeting any one of three compliance options. The options provide alternative methods to phase-in best available control technology (BACT) to reduce oxides of nitrogen (NOx) and particulate matter (PM). Vehicle owners can install the highest level PM exhaust filter on existing engines to meet the PM BACT requirements and can replace existing vehicles or engines with engines manufactured to the 2010 model year or newer engine emissions standard to meet the NOx BACT requirements. Fleets can also receive credit for using other methods that achieve the same emissions reductions from existing engines.

Table A: BACT Schedule

Compliance Date	Existing Engine	Required Actions
January 1	Model Years	
2011	Pre-1994	Install PM Filter
2012	2003 – 2004	Install PM Filter
2013	2005 – 2006	Install PM Filter
	1994 – 1999	Replace Vehicle
2014*	2000 – 2002	Replace Vehicle
2015	Pre – 1994	Replace Vehicle
2016	2003 – 2004	Replace Vehicle
2017	2005 – 2006	Replace Vehicle
2018, 2019, 2020	All pre-2007	No new requirements
2021	2007 or equivalent	Replace Vehicle
2022	2008	Replace Vehicle
2023	2009	Replace Vehicle

PM Filter – Highest level verified diesel emissions control technology to reduce PM.

* By 2014 all engines must have a PM filter regardless of engine model year.

Option 1 – BACT Schedule

The BACT schedule in Table A lists the compliance date, engine model years, and the required actions. Fleets that comply with this schedule do not have any reporting requirements. Fleets with engines that are about 7 years old or newer will always meet the requirements of this schedule.

A fleet may comply with the replacement requirement by replacing an existing vehicle with one that has a 2010 model year engine or with one that has a later compliance date on the schedule. For example, a fleet owner with a 1994 engine could meet the January 1, 2013 compliance requirements by replacing the existing truck with one that has a 2007 model year engine originally equipped with a PM filter. According to the schedule no further action would be required for that truck until 2021.

By 2021, the truck would need to be replaced with an 11 year old truck or newer. In this way, a fleet could comply by purchasing used vehicles and would not need to purchase any 2010 model year engines until 2021.

Option 2 - BACT Percentage Limits

The BACT percentage limits compliance option provides fleets more flexibility in determining which vehicles to upgrade first. Fleets using this option must report their fleet information each year. The middle column of Table B identifies the minimum percentage of the fleet's engines that need to have PM filters whether they are aftermarket installations or are originally equipped. The right column identifies the minimum percentage of the fleet's engines that need to have 2010 model year engines (or equivalent emissions) to meet the NOx BACT requirements.

Table B: BACT Percent Limit Option

Compliance Date	Percent Meeting BACT	
	PM Filter	2010 Engine*
January 1st		
2011	25%	N/A
2012	50%	N/A
2013	75%	25%
2014	100%	50%
2015	100%	50%
2016	100%	60%
2017, 2018, 2019	100%	80%
2020, 2021, 2022,	100%	90%
2023	100%	100%

*2010 Engine – Exhaust emissions equivalent to a 2010 model year engine or newer.

For example, a fleet of four trucks could meet the 25% PM filter requirement in 2011 by installing a PM filter on any one vehicle in the fleet, regardless of engine model year. If by that date the fleet already has a 2007 model year or newer engine originally equipped with a PM filter it would already meet the 25% PM filter requirement. In 2012, 50% of the fleet or two of the four trucks would need to have PM filters. By 2013, the fleet would need to replace one vehicle (25% of the fleet) with one having a 2010 model year engine. Since the engine is originally equipped with a PM filter, the fleet would have 3 out of 4 trucks with PM filters and would also meet the 75% PM filter requirement for that year. By 2014, the fourth vehicle would need to be replaced with one having a 2010 model year engine originally equipped

with a PM filter. The regulation would require no further action from the fleet until 2017 when one of the trucks with an aftermarket PM filter would need to be replaced, and by 2020 the fourth vehicle would need to be replaced.

Option 3 - Fleet Average

The fleet averaging option allows a fleet to gradually reduce their fleet emissions by meeting a fleet average emissions target for PM and one for NOx. The fleet emission targets for PM decline from 2011 so that by 2014 all engines will have PM filters. The NOx emissions targets decline from 2013 so that by 2023 all engines will have emissions equivalent to a 2010 model year engine. This compliance option provides credit for emissions reductions from a wide variety of emissions control technologies and alternative fueled vehicles, and provides the most flexibility in choosing which methods to reduce the average emissions for the fleet. Fleets using this option must report their fleet information each year.

The average emissions calculated for the fleet must be less than or equal to the targets specified in the regulation for each compliance year. The NOx and PM emissions factors and targets for each engine are based on the engine model year and vehicle weight class. If an exhaust retrofit is used, the emissions factor of the engine is reduced by the percent reduction for which the exhaust retrofit has been verified. A fleet can comply by having some engines with emissions factors above the target provided the fleet also has a number of engines with emissions factors below the targets so that the average meets the goal. The emissions factors and emissions targets for both PM and NOx are listed in the regulation and are included in compliance tools that automatically do the calculations.

Do I need to declare which compliance option I intend to use?

No, once the requirement of any one compliance option is met for PM and any one option is met for NOx, the fleet is in compliance. Fleets can use different compliance options each year. A fleet calculator spreadsheet is available at www.arb.ca.gov/msprog/onrdiesel/calculators.htm to allow fleet owners to evaluate different compliance options for their own fleet. The calculator determines when any of the 3 options are met. The calculator also accounts for vehicles that qualify for credits, delays and other provisions and highlights when any of the three options are met for either pollutant.

Where can I find more information about the regulation?

Additional fact sheets, and information are available at: www.arb.ca.gov/dieseltruck. Speak to an ARB representative by calling (866) 6DIESEL (866-634-3735) or email 8666diesel@arb.ca.gov. To obtain this document in an alternative format or language please call (866) 634-3735.